

FIG. 1

FIG. 2

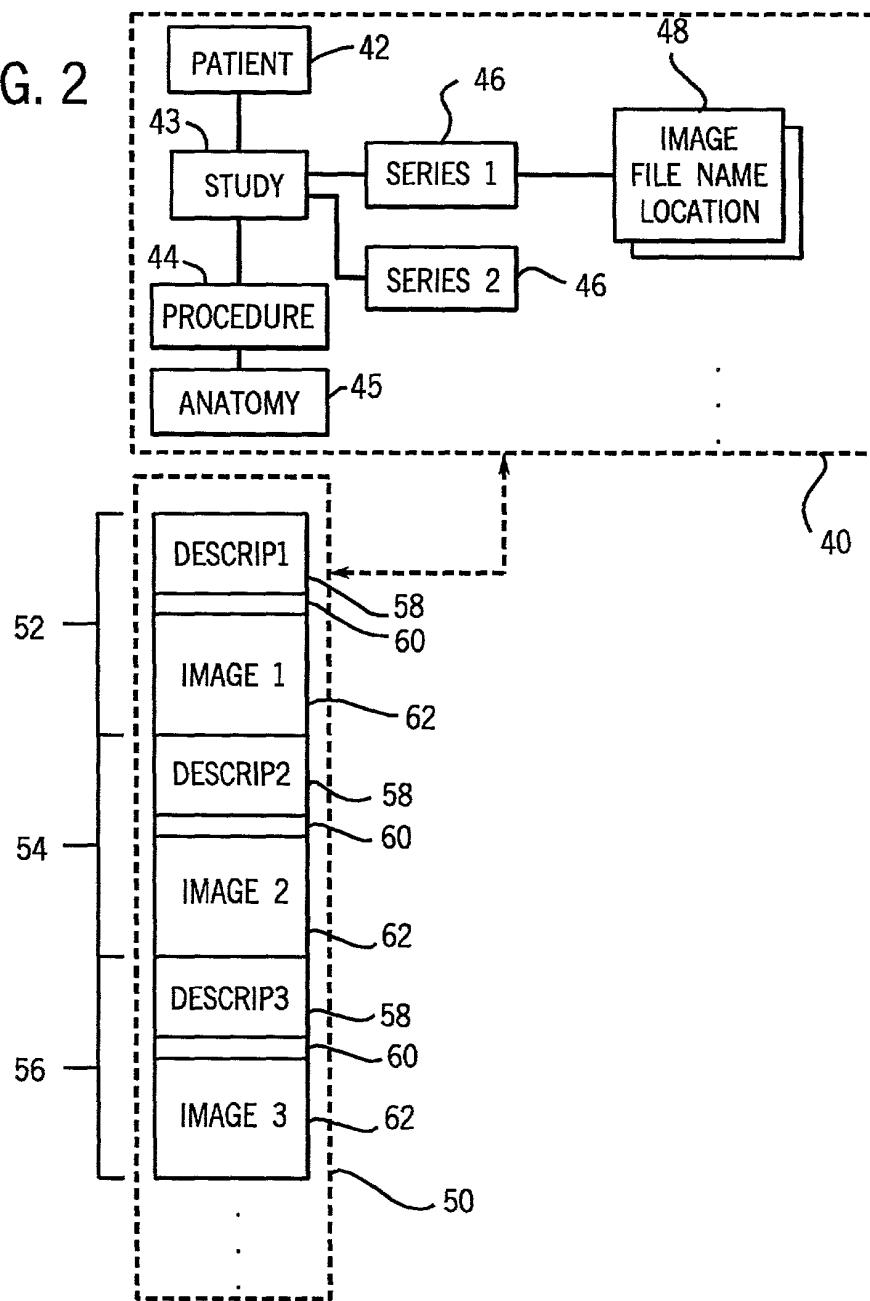
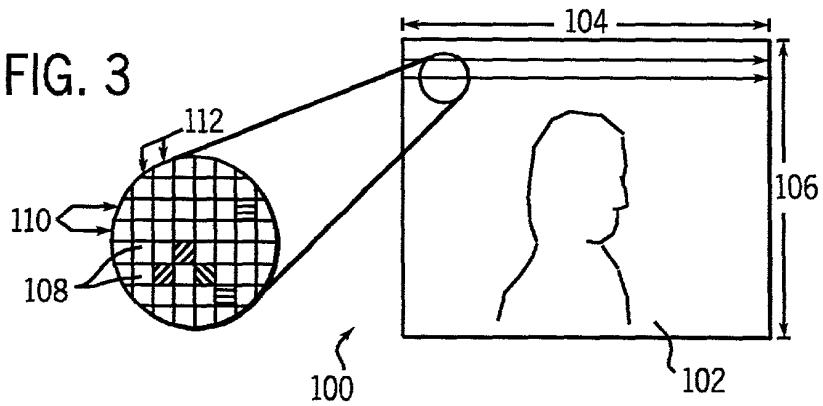


FIG. 3



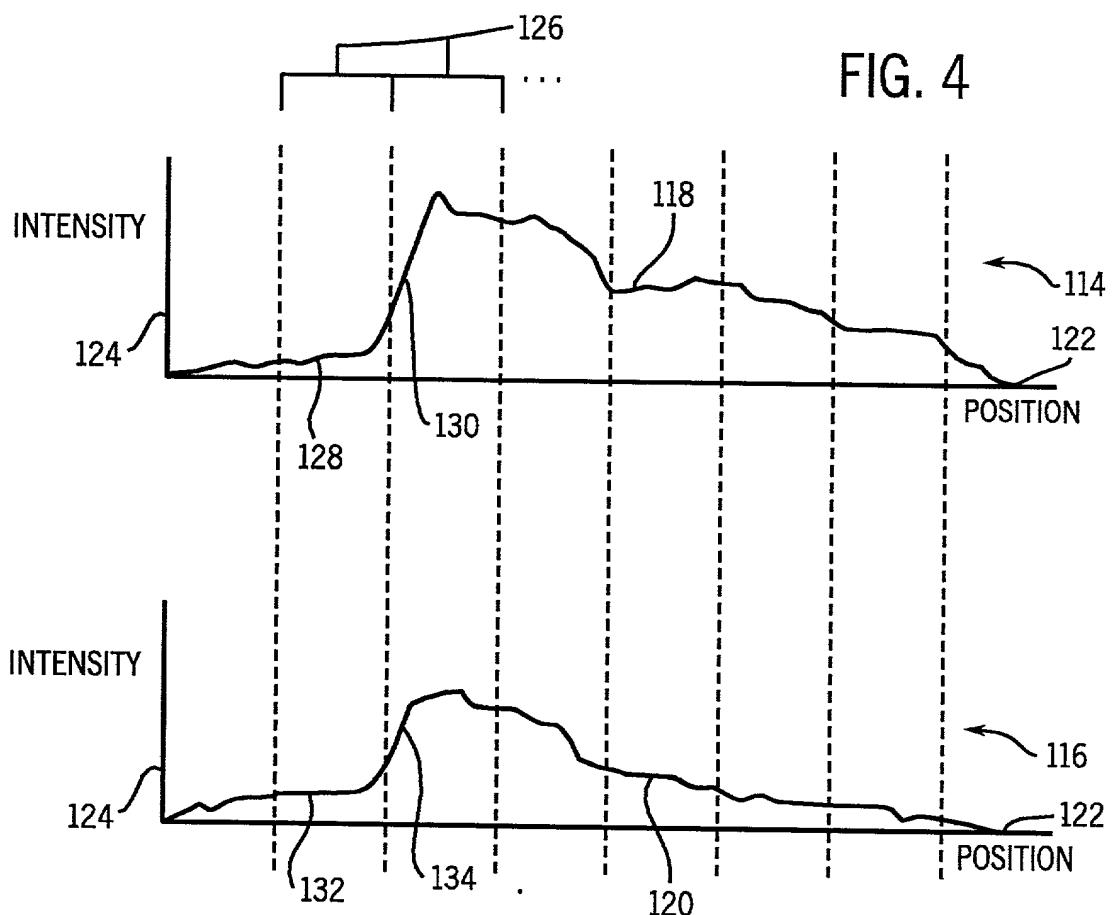


FIG. 4

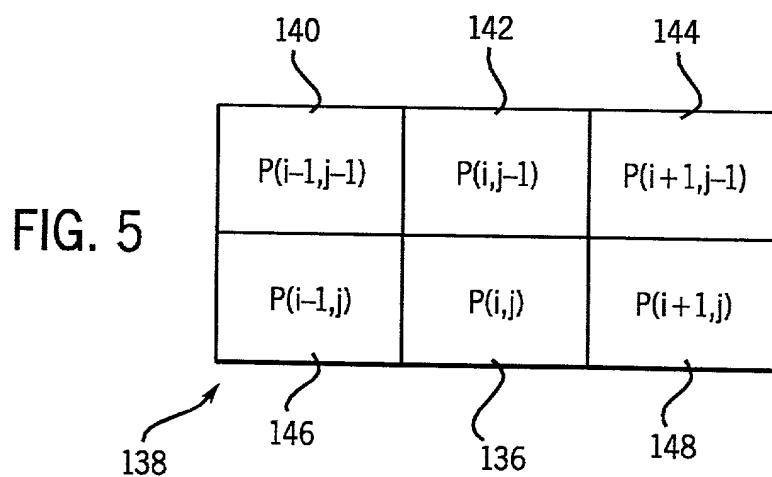


FIG. 5

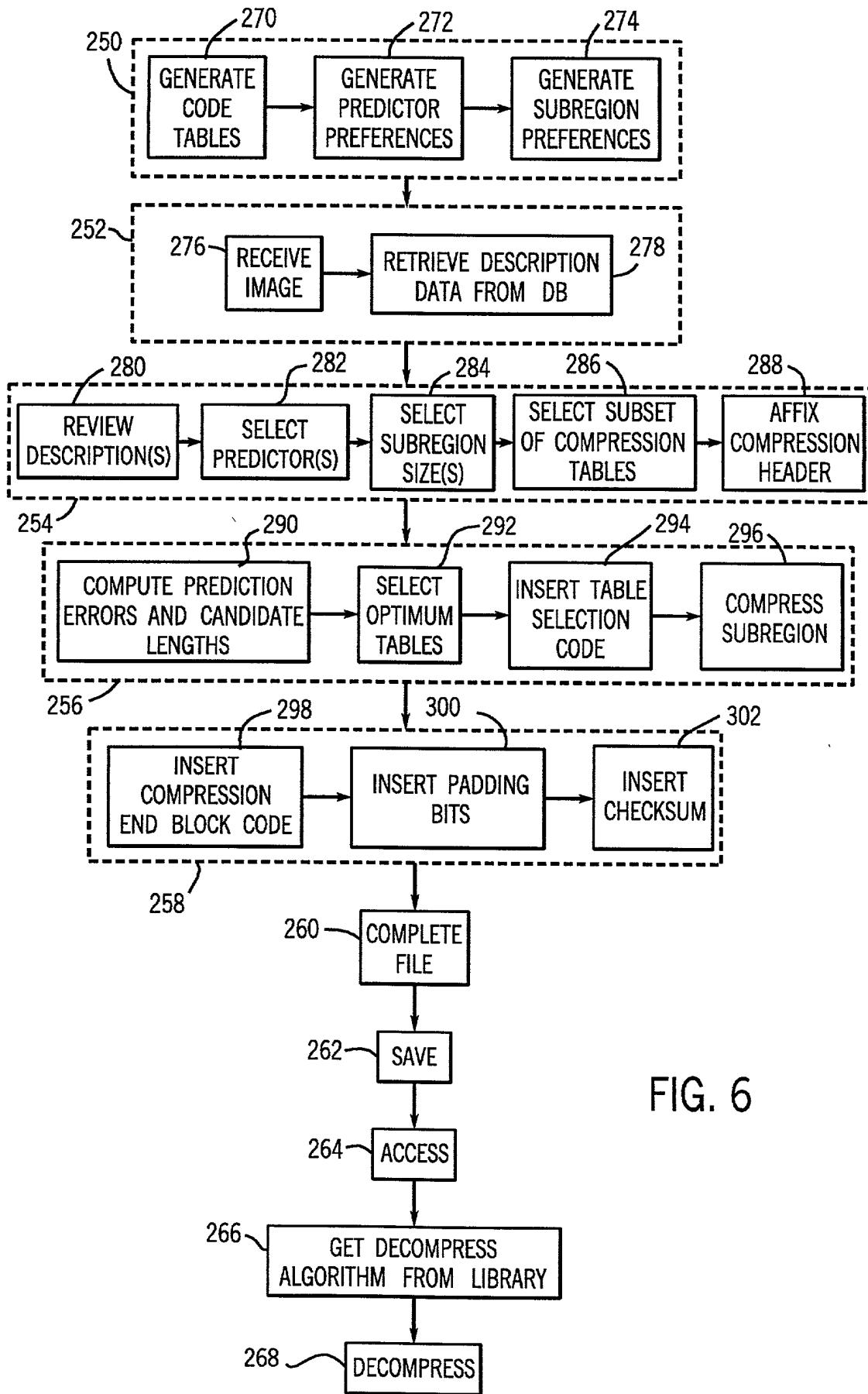


FIG. 6

16 - BIT LOSSLESS ENCODING						FIG. 7
HUFFMAN CODE		SCHEME 0	- MAX RATIO = 16:1		ENCODED RANGE	
PREFIX	CODE	EXTENSION	DIFFERENCE d	CODE LENGTH	WIDTH	
180	0		0	1	0	
	100		+1	3	+1	
	101		-1	3		
	1100	X	+2 TO +3	5	+2	
	1101	X	-2 TO -3	5		170
	11100	XX	+4 TO +7	7	+4	
	11101	XX	-4 TO -7	7		
	111100	XXX	+8 TO +15	9	+8	
	111101	XXX	-8 TO -15	9		
	1111100	XXXX	+16 TO +31	11	+16	
	1111101	XXXX	-16 TO -31	11		
	11111100	XXXXX	+32 TO +63	13	+32	
	11111101	XXXXX	-32 TO -61	13		
	111111100	XXXXXX	+64 TO +127	15	+64	
	111111101	XXXXXX	-64 TO -127	15		
	1111111100	XXXXXXX	+128 TO +255	17	+128	
	1111111101	XXXXXXX	-128 TO -255	17		
	11111111100	XXXXXXXX	+256 TO +511	19	+256	
	11111111101	XXXXXXXX	-256 TO -511	19		
	11111111110 <16 BITS)		ACTUAL VALUE	27		
172	11111111111		END OF BLOCK	11		178
		174		176		

16 - BIT LOSSLESS ENCODING						FIG. 8
HUFFMAN CODE		SCHEME 1	- MAX RATIO = 5.33:1		ENCODED RANGE	
PREFIX	CODE	EXTENSION	DIFFERENCE d	CODE LENGTH	WIDTH	
00	X		0 TO +1	3	1	
01	X		-1 TO -2	3		
100	XX		+2 TO +5	5	+4	
101	XX		-3 TO -6	5		
1100	XXX		+6 TO +13	7	+8	184
1101	XXX		-7 TO -14	7		
11100	XXXX		+14 TO +29	9	+16	
11101	XXXX		-15 TO -30	9		
111100	XXXXX		+30 TO +61	11	+32	
111101	XXXXX		-31 TO -62	11		
1111100	XXXXXX		+62 TO +125	13	+64	
1111101	XXXXXX		-63 TO -126	13		
11111100	XXXXXXX		+126 TO +253	15	+128	
11111101	XXXXXXX		-127 TO -254	15		
111111100	XXXXXXXX		+254 TO +509	17	+256	
111111101	XXXXXXXX		-255 TO -510	17		
1111111100	XXXXXXXXX		+510 TO +1021	19	+512	
1111111101	XXXXXXXXX		-511 TO -1022	19		
1111111110 <16 BITS)			ACTUAL VALUE	26		
1111111111			END OF BLOCK	10		

FIG. 9

SCHEME 2 - MAX RATIO = 4:1						ENCODED RANGE
HUFFMAN CODE PREFIX	CODE EXTENSION	DIFFERENCE d	CODE LENGTH	WIDTH		
00	XX	0 TO +3	4	3	← 186	
01	XX	-1 TO -4	4			
100	XXX	+4 TO +11	6	+8		
101	XXX	-5 TO -12	6			
1100	XXXX	+12 TO +27	8	+16		
1101	XXXX	-13 TO -28	8			
11100	XXXXX	+28 TO +59	10	+32		
11101	XXXXX	-29 TO -60	10			
111100	XXXXXX	+60 TO +123	12	+64		
111101	XXXXXX	-61 TO -124	12			
1111100	XXXXXXX	+124 TO +251	14	+128		
1111101	XXXXXXX	-125 TO -252	14			
11111100	XXXXXXXX	+252 TO +507	16	+256		
11111101	XXXXXXXX	-253 TO -508	16			
111111100	XXXXXXXXX	+508 TO +1019	18	+512		
111111101	XXXXXXXXX	-509 TO -1020	18			
111111110 <16 BITS)		ACTUAL VALUE	25			
111111111		END OF BLOCK	9			

FIG. 10

SCHEME 3 - MAX RATIO = 3.2:1						ENCODED RANGE
HUFFMAN CODE PREFIX	CODE EXTENSION	DIFFERENCE d	CODE LENGTH	WIDTH		
00	XXX	0 TO +7	5	7	← 188	
01	XXX	-1 TO -8	5			
100	XXXX	+8 TO +23	7	+16		
101	XXXX	-9 TO -24	7			
1100	XXXXX	+24 TO +55	9	+32		
1101	XXXXX	-25 TO -56	9			
11100	XXXXXX	+56 TO +119	11	+64		
11101	XXXXXX	-57 TO -120	11			
111100	XXXXXXX	+120 TO +247	13	+128		
111101	XXXXXXX	-121 TO -248	13			
1111100	XXXXXXXX	+248 TO +503	15	+256		
1111101	XXXXXXXX	-249 TO -504	15			
11111100	XXXXXXXXX	+504 TO +1015	17	+512		
11111101	XXXXXXXXX	-505 TO -1016	17			
11111110 <16 BITS)		ACTUAL VALUE	24			
11111111		END OF BLOCK	8			

FIG. 11

SCHEME 4 - MAX RATIO = 2.67:1					
HUFFMAN CODE PREFIX	CODE EXTENSION	DIFFERENCE d	CODE LENGTH	ENCODED RANGE WIDTH	
00	XXXX	0 TO +15	6	15	
01	XXXX	-1 TO -16	6		
100	XXXXX	+16 TO +47	8	+32	
101	XXXXX	-17 TO -48	8		
1100	XXXXXX	+48 TO +111	10	+64	
1101	XXXXXX	-49 TO -112	10		
11100	XXXXXXX	+112 TO +239	12	+128	
11101	XXXXXXX	-113 TO -240	12		
111100	XXXXXXXX	+240 TO +495	14	+256	
111101	XXXXXXXX	-241 TO -496	14		
1111100	XXXXXXXXX	+496 TO +1007	16	+512	
1111101	XXXXXXXXX	-497 TO -1008	16		
1111110 <16 BITS)		ACTUAL VALUE	23		
1111111		END OF BLOCK	7		

FIG. 12

SCHEME 5 - MAX RATIO = 2.29:1					
HUFFMAN CODE PREFIX	CODE EXTENSION	DIFFERENCE d	CODE LENGTH	ENCODED RANGE WIDTH	
00	XXXX	0 TO +31	7	31	
01	XXXX	-1 TO -32	7		
100	XXXXX	+32 TO +95	9	+64	
101	XXXXX	-33 TO -96	9		
1100	XXXXXX	+96 TO +223	11	+128	
1101	XXXXXX	-97 TO -224	11		
11100	XXXXXXXX	+224 TO +479	13	+256	
11101	XXXXXXXX	-225 TO -480	13		
111100	XXXXXXXX	+480 TO +991	15	+512	
111101	XXXXXXXX	-481 TO -992	15		
111110 <16 BITS)		ACTUAL VALUE	22		
111111		END OF BLOCK	6		

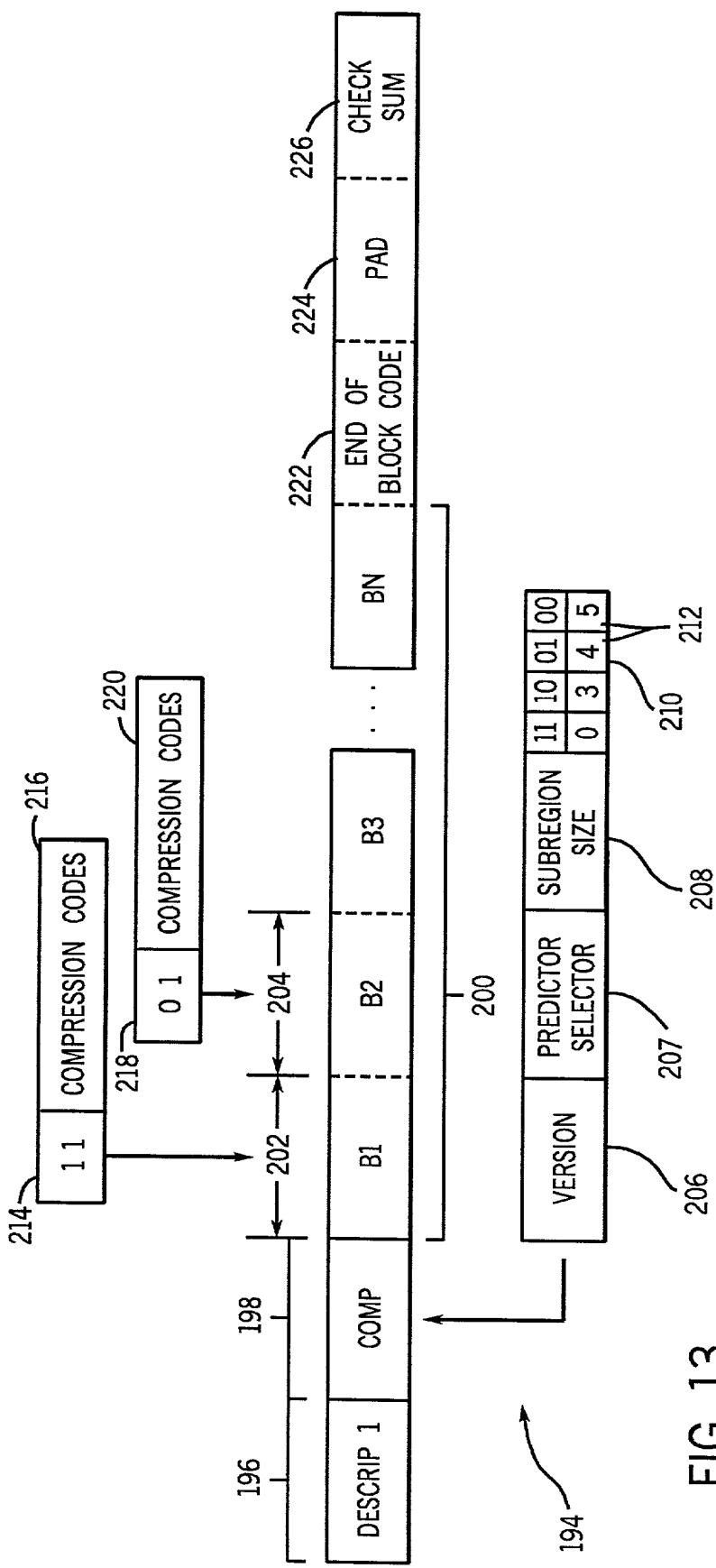


FIG. 13

FIG. 14

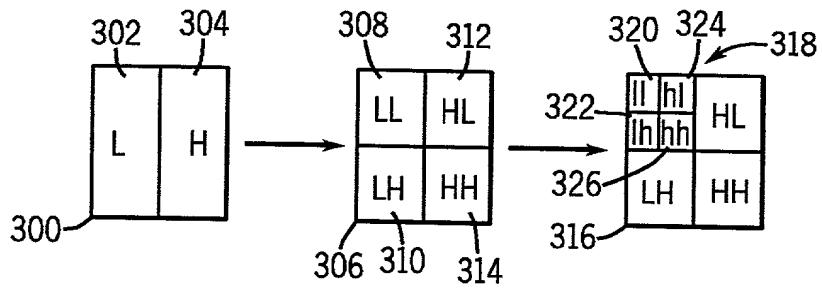
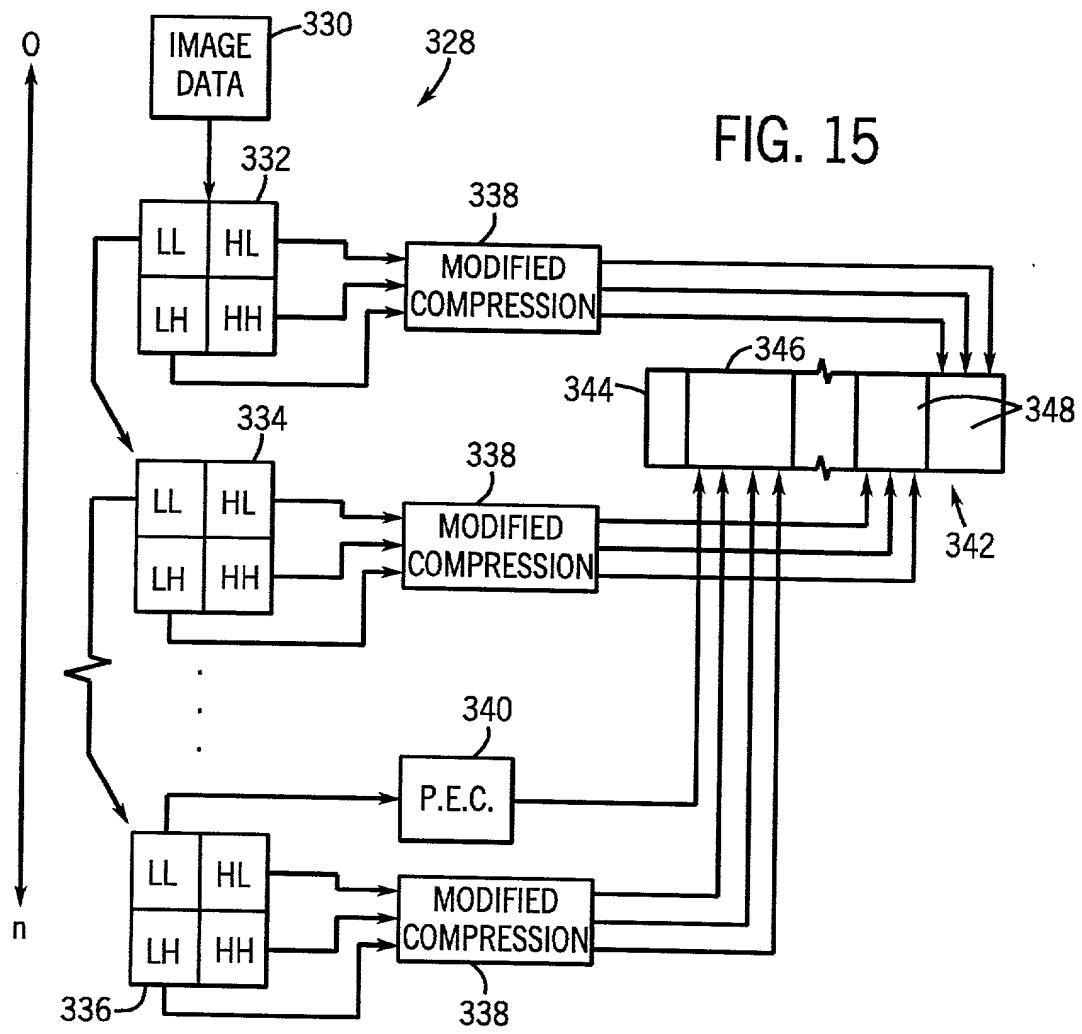


FIG. 15



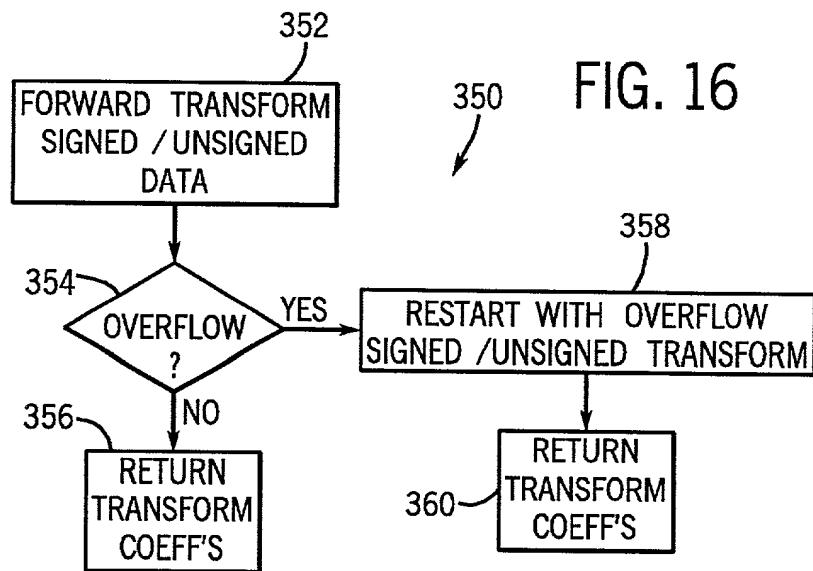


FIG. 16

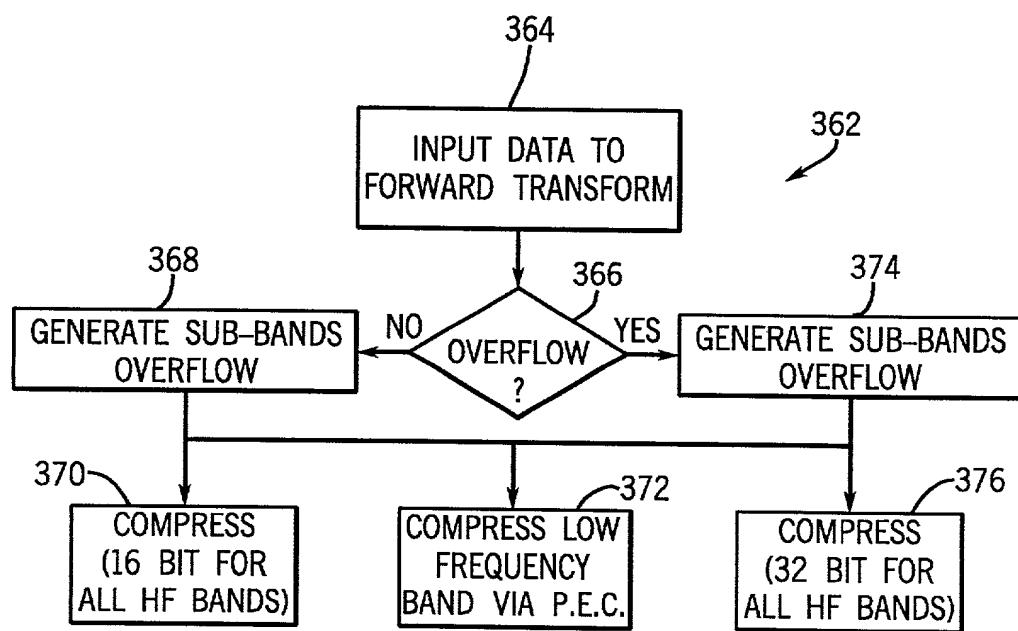


FIG. 17

FIG. 18

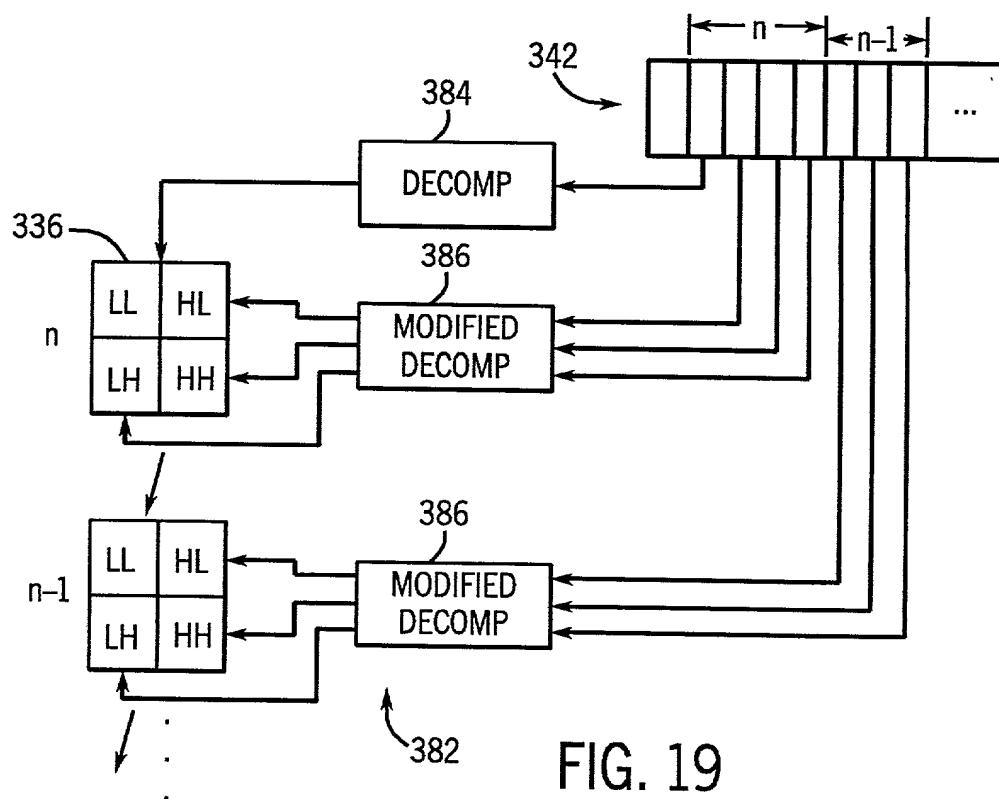
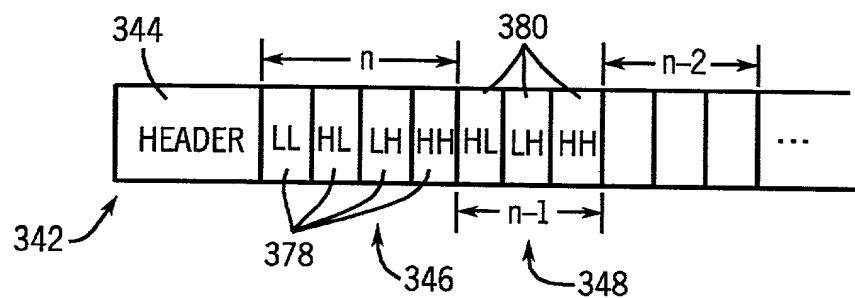
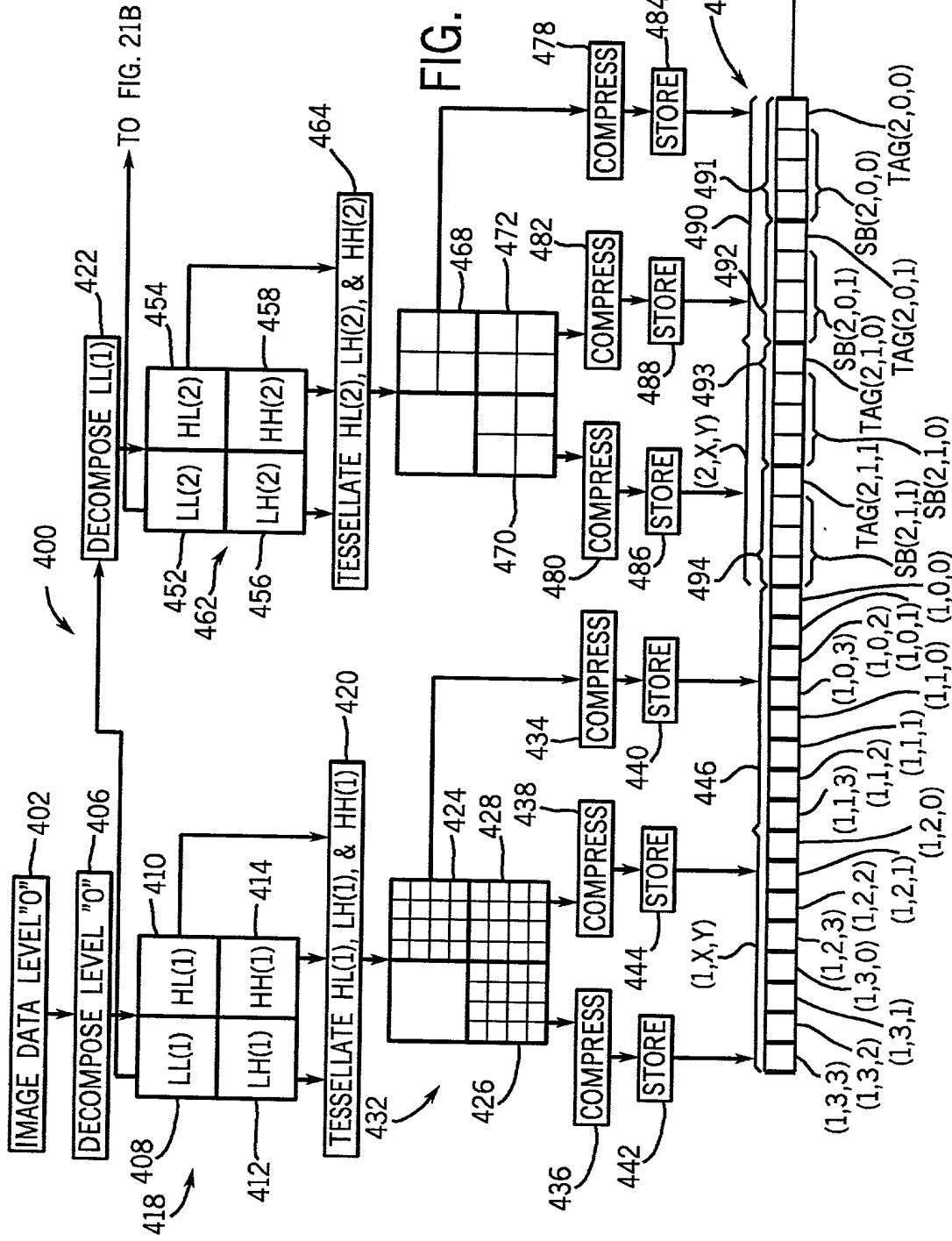


FIG. 19

FIG. 20

LEVEL	ROWS	COLS	COMPRESSED BYTES	EFF COMP RATIO
5	64	79	5652	1811:1
4	128	157	13780	526:1
3	256	313	49868	147:1
2	512	625	186128	40:1
1	1024	1250	724560	10:1
0	2048	2500	2929860	2.6:1

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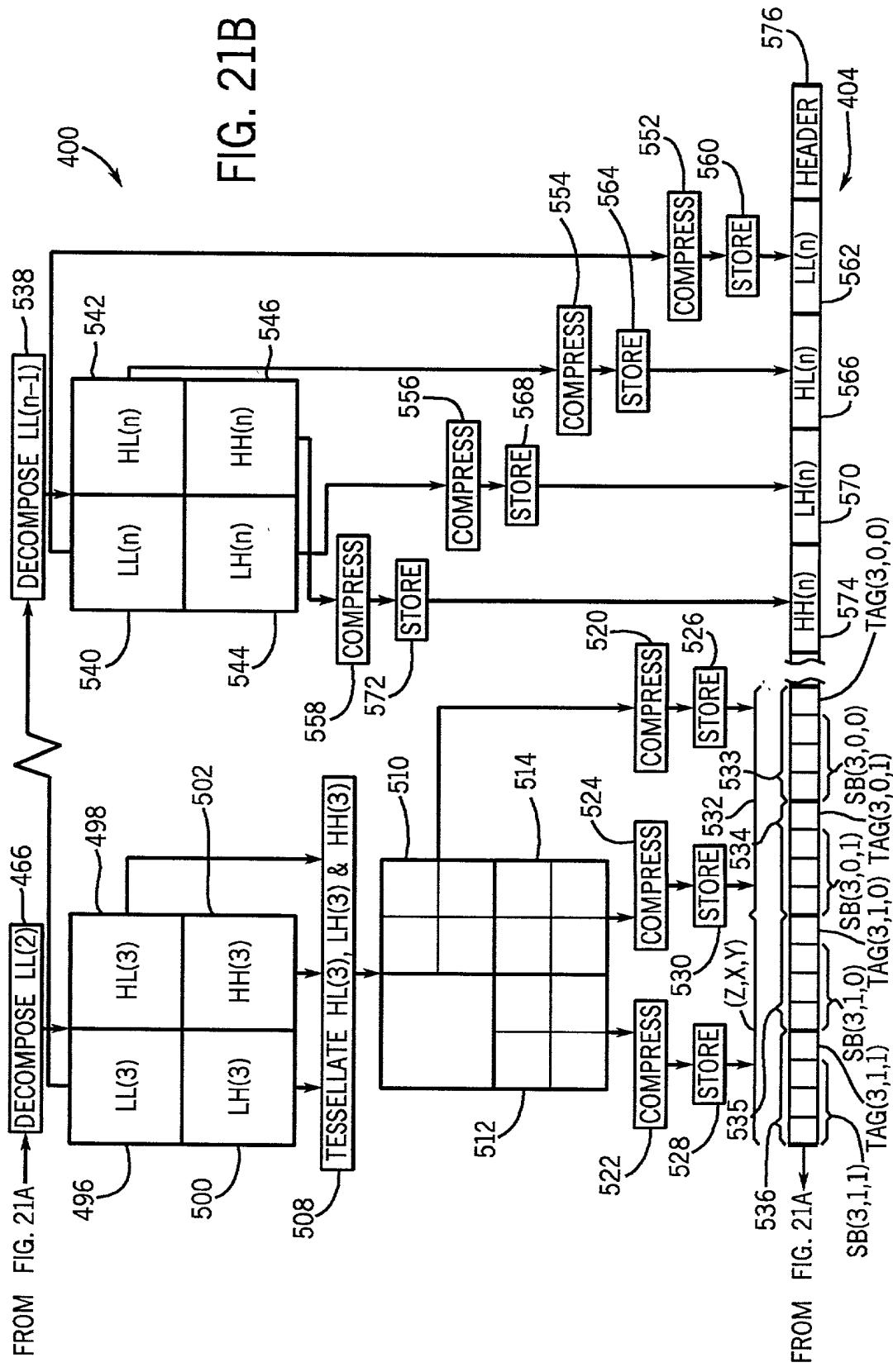
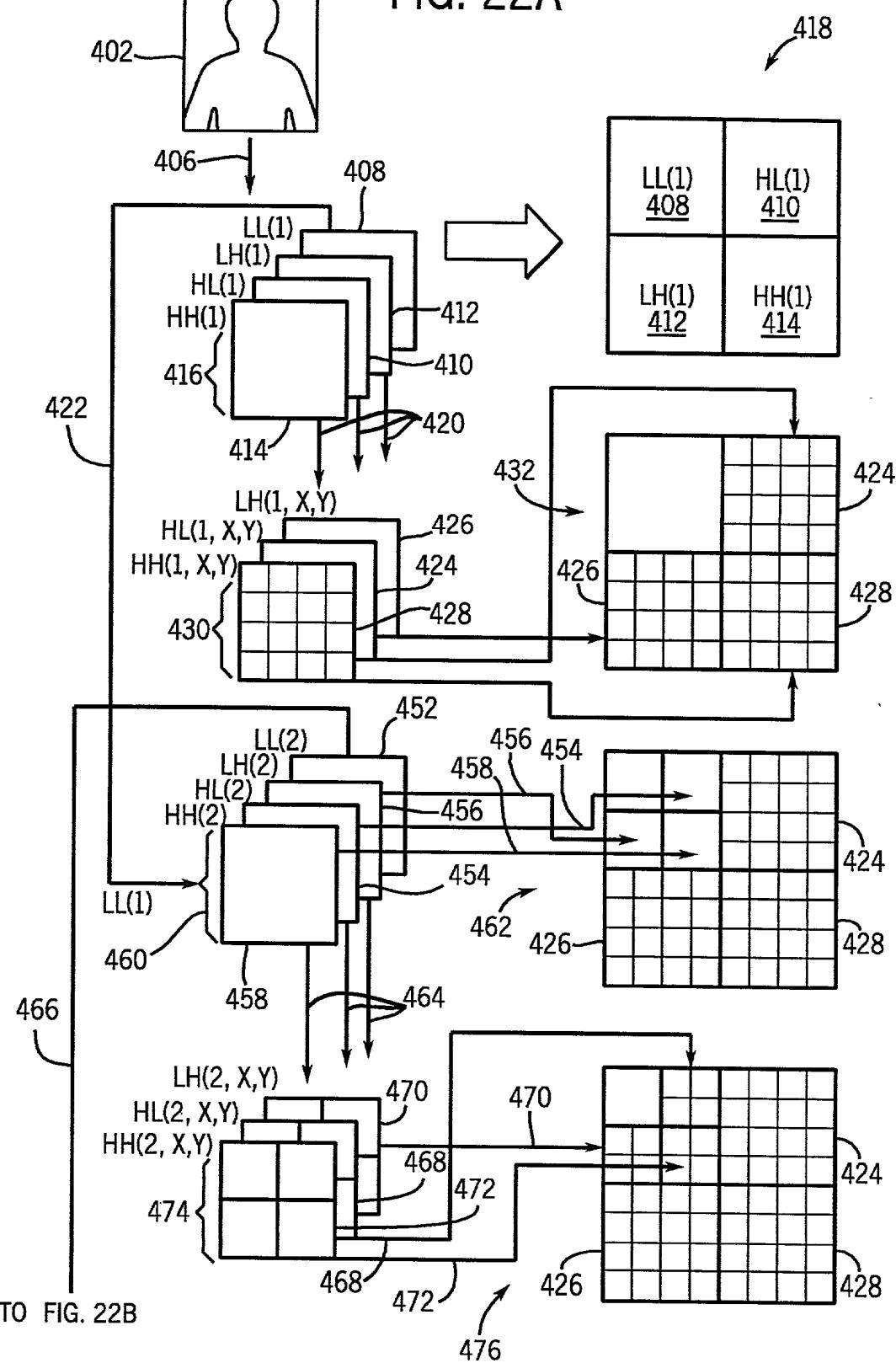


IMAGE RECONSTRUCTION

DATA MAP

FIG. 22A



FROM FIG. 22A

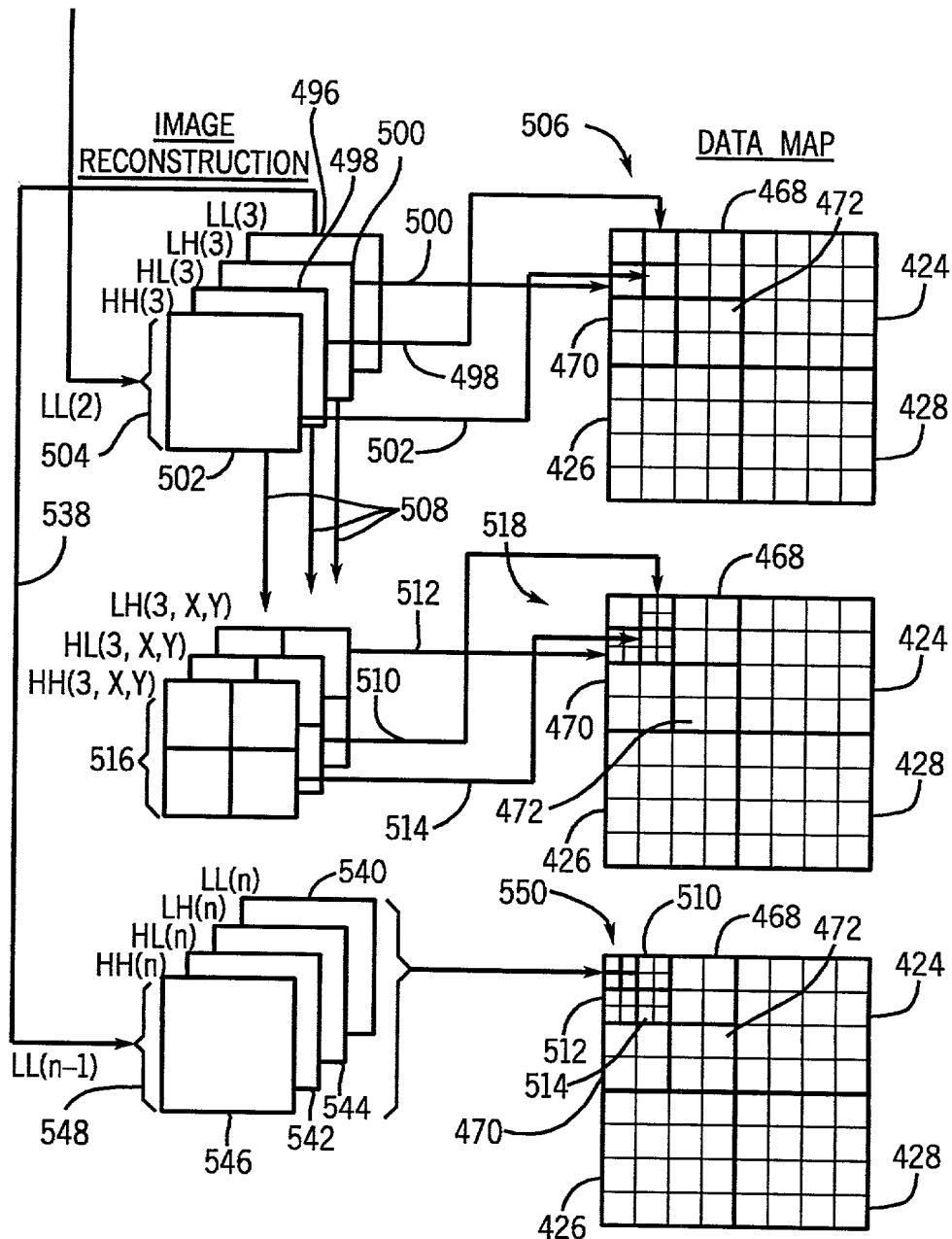


FIG. 22B

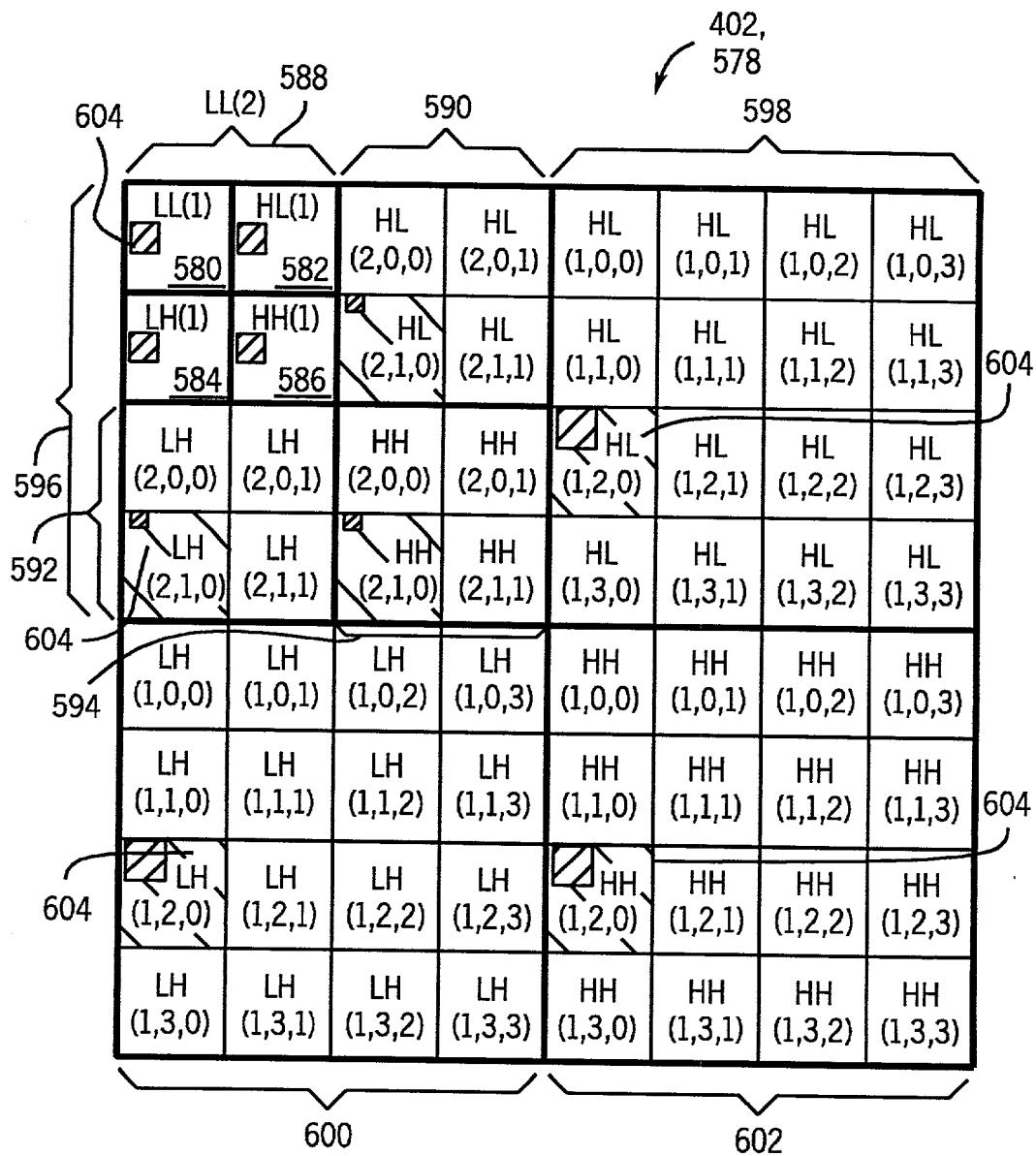


FIG. 23

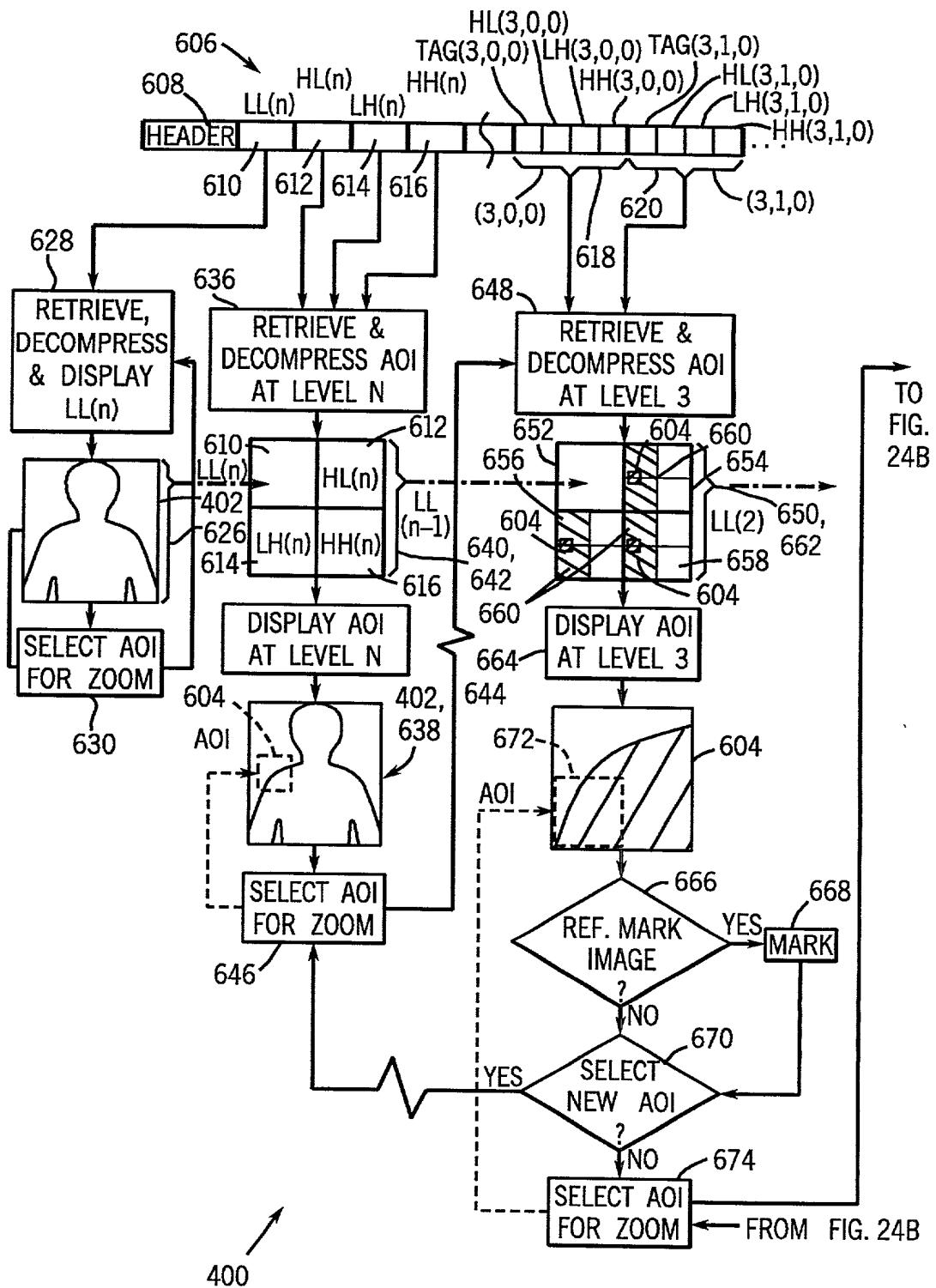


FIG. 24A

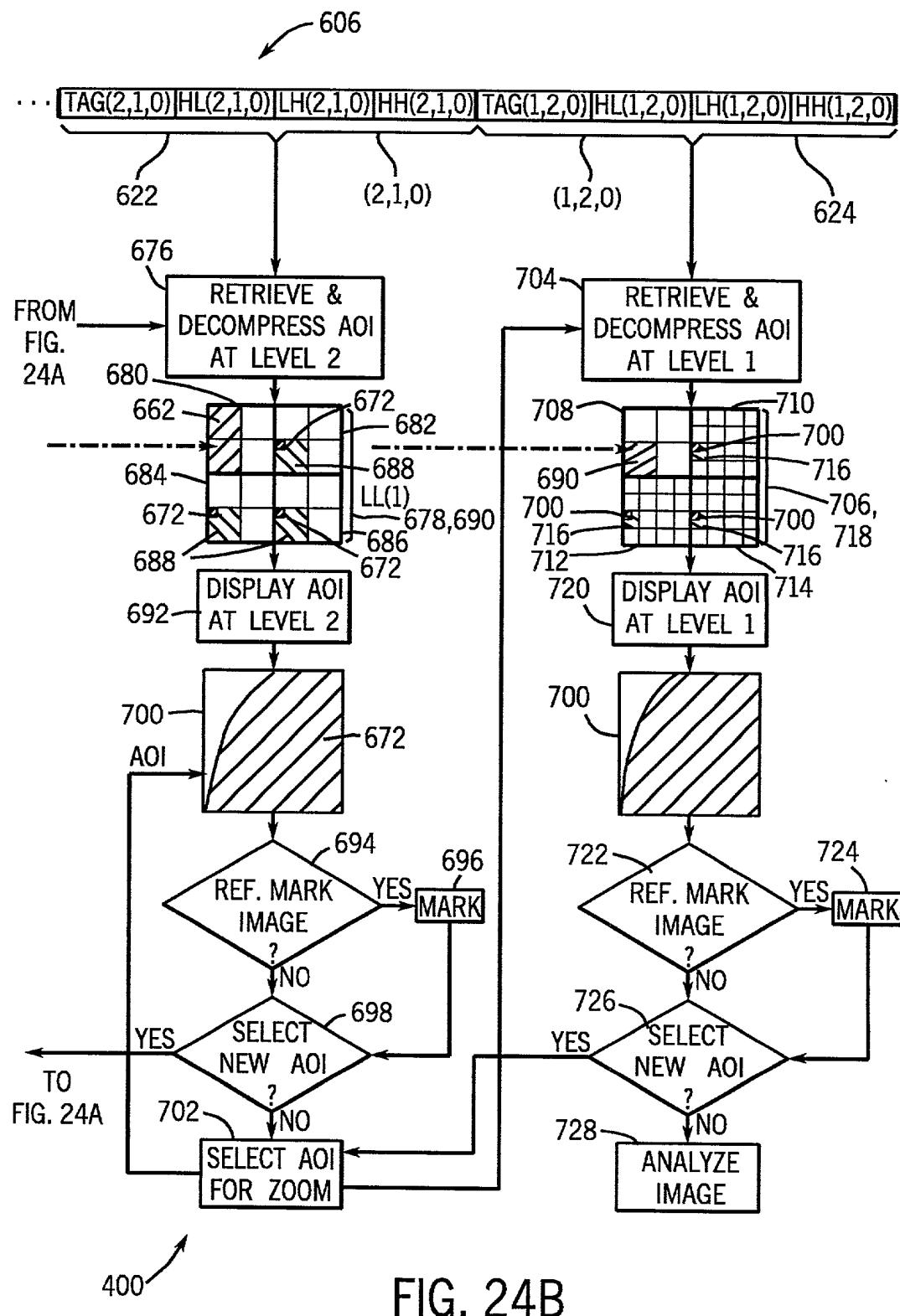


FIG. 24B

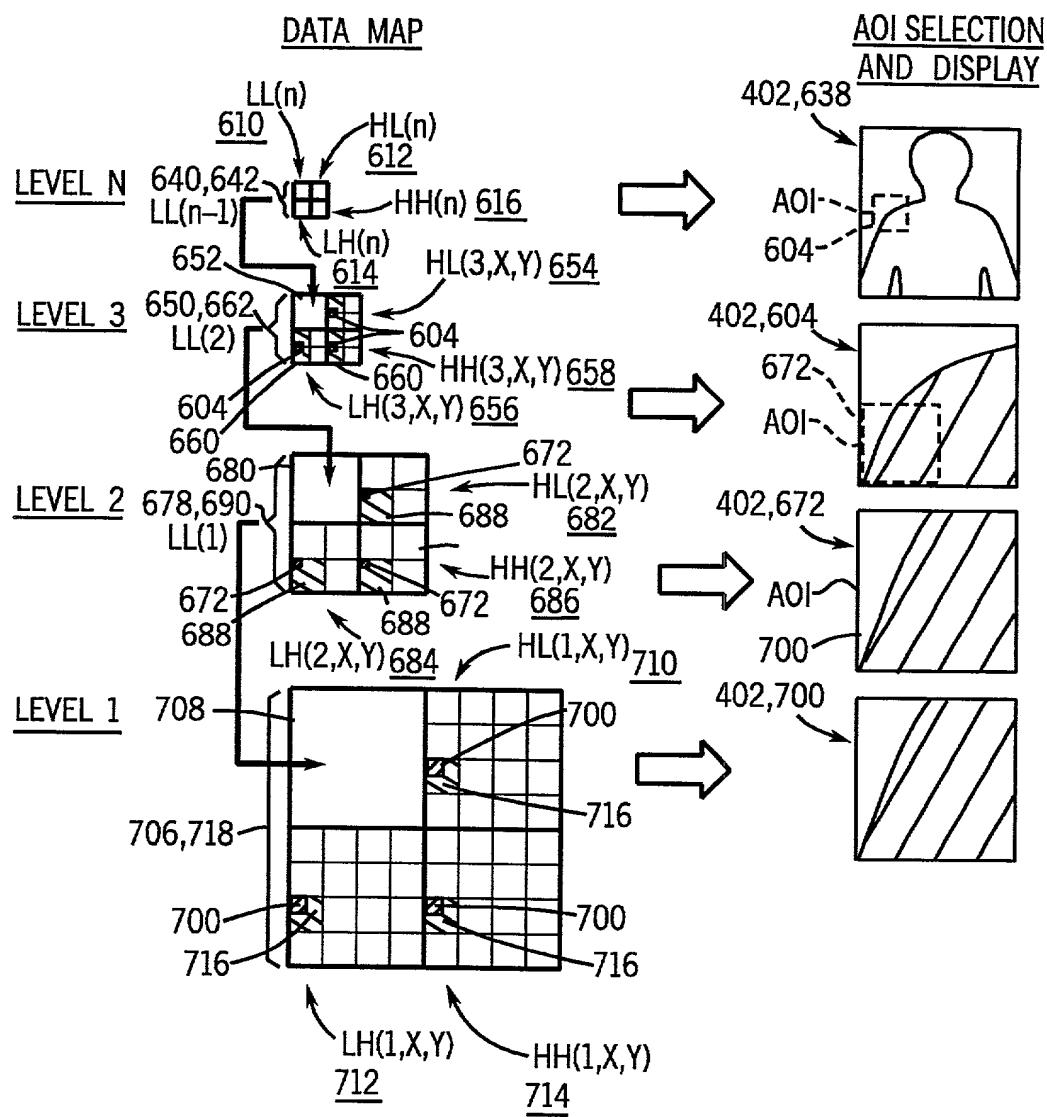
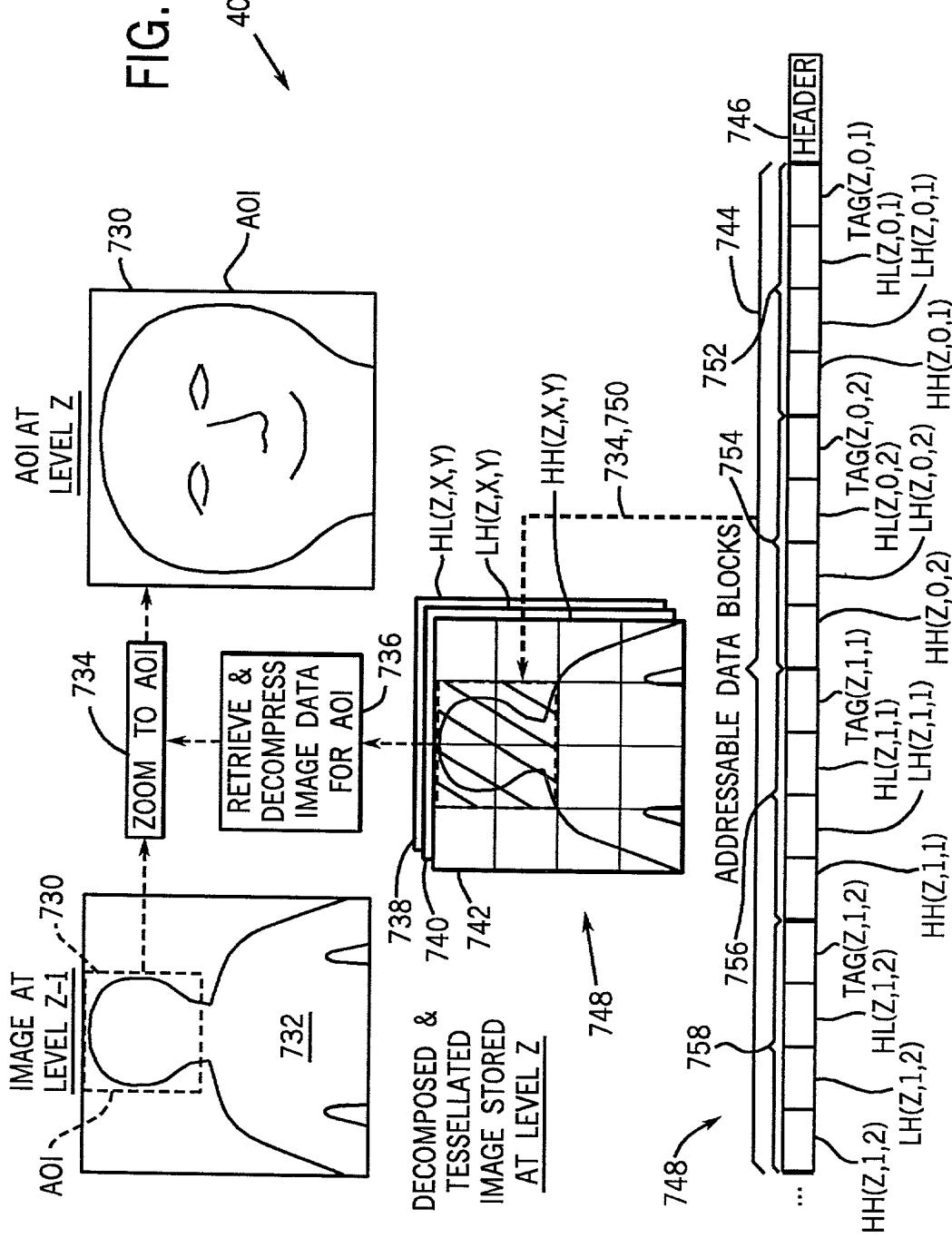


FIG. 25

FIG. 26



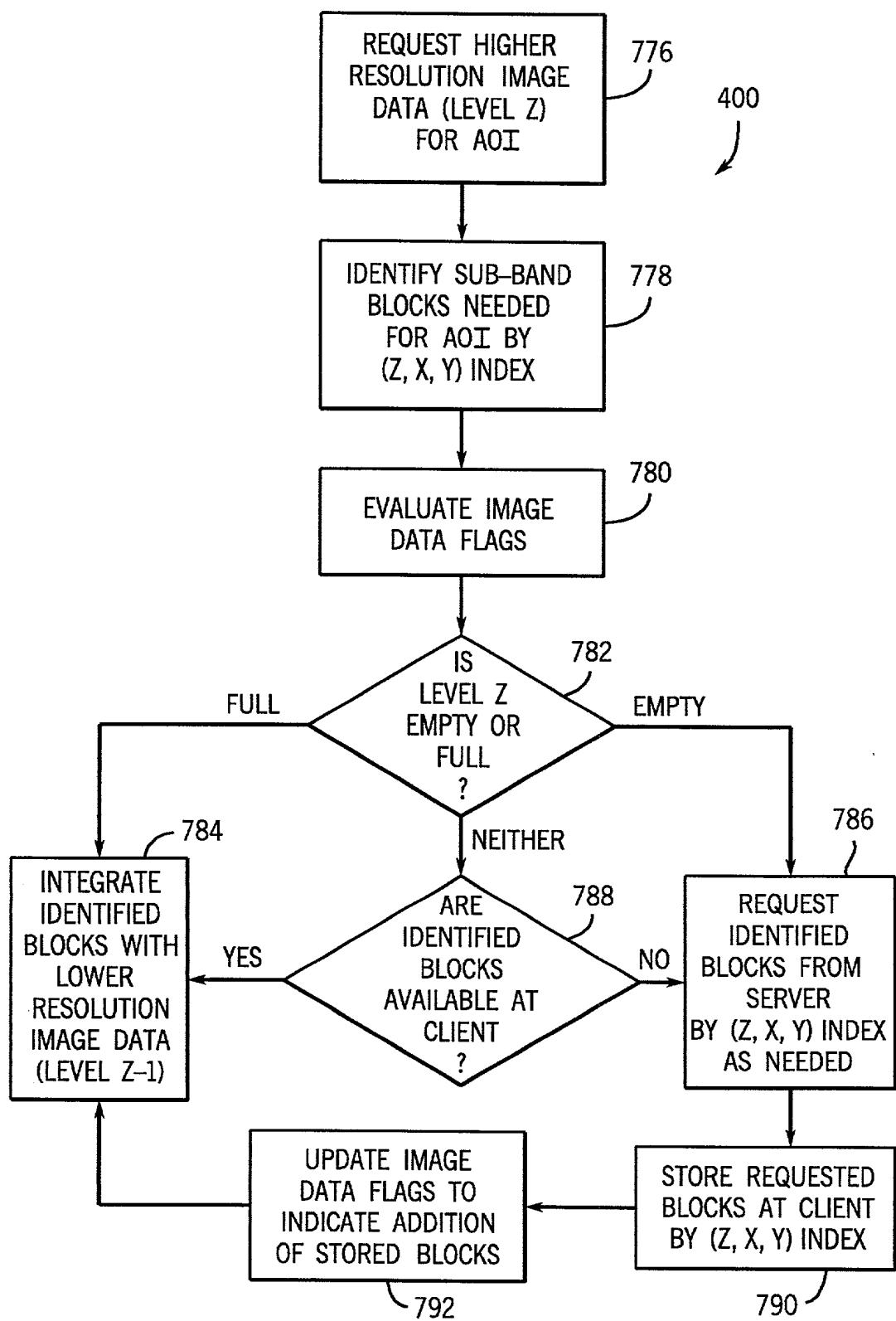


FIG. 27